

**What is claimed is:**

1. A method of determining a spatial hierarchy for polygon data, comprising:
  - obtaining a switching range; and
  - determining a polygon density for the spatial hierarchy, by using the switching range and a cube-root scaling factor.
2. The method of claim 1, wherein the cube-root scaling factor is determined based on an altitude parameter.
- 10 3. The method of claim 1, wherein the spatial hierarchy is tile-based.
4. The method of claim 1, wherein the polygon data corresponds to cultural features.
- 15 5. The method of claim 1 further comprising providing a user interface, wherein design parameters of the spatial hierarchy are obtained and/or modified through the user interface.
- 20 6. The method of claim 5, wherein a number of levels in the spatial hierarchy is obtained and/or modified through the user interface.
7. The method of claim 5, wherein an extent of tiles for each level of the spatial hierarchy is obtained and/or modified through the user interface.
- 25 8. The method of claim 5, wherein a critical size of polygonal elements to be inserted in each level of the spatial hierarchy is obtained and/or modified through the user interface.
- 30 9. The method of claim 5, wherein a switching distance for tiles of each level of the spatial hierarchy is obtained and/or modified through the user interface.

10. A system for determining a spatial hierarchy for polygon data, comprising:  
a user interface; and  
a feature analyzer for determining a polygon density for the spatial hierarchy, by  
using (i) a switching range obtained through the user interface and (ii) a cube-root scaling  
5 factor.
11. The system of claim 10, wherein the cube-root scaling factor is determined  
based on an altitude parameter.
- 10 12. The system of claim 10, wherein the spatial hierarchy is tile-based.
13. The system of claim 10, wherein the polygon data corresponds to cultural  
features.
- 15 14. The system of claim 10, wherein design parameters of the spatial hierarchy  
are obtained and/or modified through the user interface.
- 15 16. The system of claim 14, wherein a number of levels in the spatial hierarchy  
is obtained and/or modified through the user interface.
- 20 17. The system of claim 14, wherein a critical size of polygonal elements to be  
inserted in each level of the spatial hierarchy is obtained and/or modified through the user  
interface.
- 25 18. The system of claim 14, wherein a switching distance for tiles of each level  
of the spatial hierarchy is obtained and/or modified through the user interface.

19. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for determining a spatial hierarchy for polygon data, the method steps comprising:

5                   obtaining a switching range; and  
                  determining a polygon density for the spatial hierarchy, by using the switching range and a cube-root scaling factor.

10                 20. A computer data signal embodied in a transmission medium which embodies instructions executable by a computer for determining a spatial hierarchy for polygon data, comprising:

15                   a first segment including user interface code; and  
                  a second segment including feature analysis code to determine a polygon density for the spatial hierarchy, by using (i) a switching range obtained through the user interface code and (ii) a cube-root scaling factor.

21. A method of determining a spatial hierarchy for polygon data, comprising:  
determining a cube-root scaling factor based on an altitude parameter; and  
using the cube-root scaling factor to scale level-of-detail switching ranges for the spatial hierarchy.